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(56) Documents cited

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US 4320852 US 4162024

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(58) Field of search

B8P

Selected US specifications from IPC sub-class

B65D

(54) Lidded containers

(57) A container having a base and two pairs of opposed side walls has a lid section (22) attached to each of a pair of opposed walls. Each section comprises three hingedly interconnected portions (24, 26, 28) and is fitted to the container by a hinge pin (30) accommodated in slots (32). The sections, when folded are stored in the container alongside the adjacent walls and close the container when unfolded, being supported at their lateral edges on flanges (36) formed at the top of the other pair of walls.

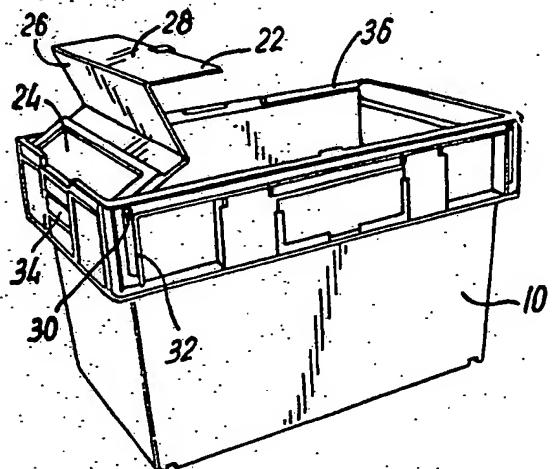


FIG. 3

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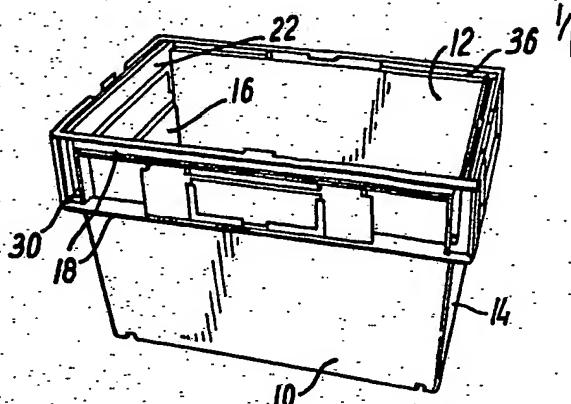


Fig. 1

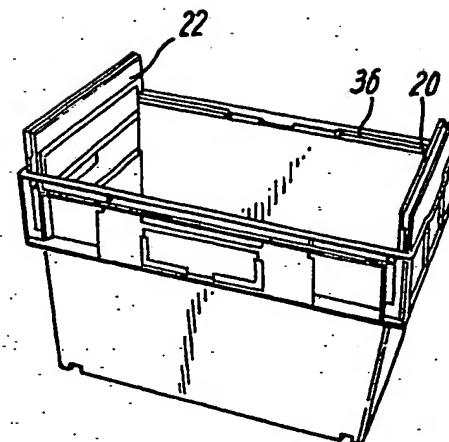


Fig. 2

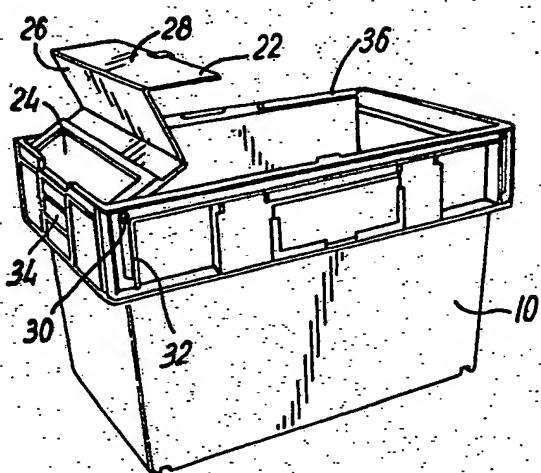


Fig. 3

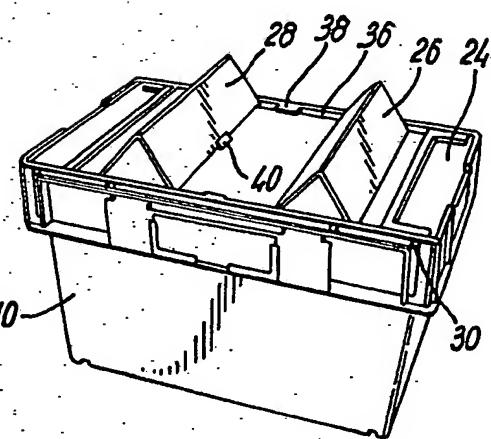


Fig. 4

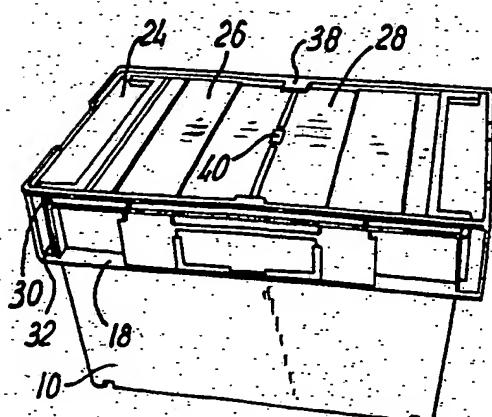


Fig. 5

Improvements in or Relating to Containers

The present invention concerns improvements in or relating to containers, especially lidded containers.

According to the present invention there is provided a container including a base, two pairs of opposed upstanding side walls and a lid mounted for movement on the container between an open condition in which it lies alongside the face of one or a pair of opposed side walls, to a closed condition in which it lies across the top of the container.

Preferably in the open condition the lid lies alongside the inner face of the side wall or walls.

Preferably the lid comprises two sections, each section being adapted, in the open condition, to lie alongside the inner face of an opposed side wall.

Preferably the lid or lid sections are mounted to the container for movement relative thereto by a pin and slot arrangement. Preferably pins project from the sides of the lid and slots are formed in the container substantially parallel to the side of the pair of the opposed sides alongside which the lid section lies in the open condition.

Preferably each section of the lid comprises three portions hingedly interconnected along a line parallel

to the container side to which the lid section is attached.

Preferably the hinges are formed integrally with the lid portions from a plastics material.

Preferably inwardly directed flanges are defined by the other pair of opposed side walls to provide a ledge on which the sides of the lid can rest when the lid is in the closed position.

Preferably interconnection means are provided on the forward edges of the lid sections which, when in the closed position, lie alongside each other.

Preferably said other pair of opposed sides of the container are provided with inwardly directed lugs which are adapted to overlie the forward edges of the lid section when in the closed position.

Preferably the pins by which the lid sections are attached to the container are provided by the projecting ends of a metal rod which extends across the lid section.

Preferably the said opposed sides of the containers are each provided with an aperture which the associated lid section can be moved away from their

open condition, in which they are folded about their hinges, towards the closed position.

An embodiment of the present invention will now be described by way of example only with reference to the accompanying drawings in which:-

Fig. 1 shows a lidded container in the open condition; and

Figs. 2 to 5 show the container with the lid sections thereof as they are moved to the closed position illustrated in Fig. 5.

A container manufactured from plastics material comprises a base and two pairs of opposed upstanding side walls 10, 12, 14, 16. Strengthening flanges, generally indicated by the reference numeral 18 are provided around the top of the box but as these do not form part of the present invention they will not be described in any detail in this specification.

Two lid sections 20, 22 are attached to the container and in the open condition lie within the container alongside one pair of opposed sides walls 14, 16. As can best be seen in Figs. 3 to 5, each lid section 20, 22 comprises three hingedly interconnected portions 24, 26, 28. Each lid section is moulded from

plastics material and the hinges between each portion 24, 26 and 26, 28 are plastic hinges formed integrally with the portions on manufacture of the lid sections.

A U-shaped steel bar, only the end 30 of which is visible, is moulded into the section 24 and has lateral extensions 30 from the ends of each limb of the U forming hinge pins for the lid section which are mounted in slots 32 in the other pair of opposed side walls 10, 12, the slots running parallel to the inner surface of the opposed side walls 14, 16. The pins 30 are slidable and rotatable in the slots 32 a lid section in its stored position, shown in Fig. 1, has each portion 24, 26, 28 folded flat against its neighbouring portion with the pins 30 at the lower end of the slot 32, the folded up lid section being stored within the container alongside the inner surface of the respective end wall 14, 16. Finger holes 34 are provided in the walls 14, 16 so that as the first step towards closing a lid section the users fingers can be inserted through the finger holes 34 to push the folded lid sections 20, 22 upwardly to the position shown in Fig. 2 when the pins 30 are brought to the top of the slots 32. From this position the lid sections can be pivoted towards the centre of the box and simultaneously unfolded about the hinges through the position shown in Fig. 3 to the position shown in Fig. 4 where the lid section portions 24 carrying the

hinge pins 30 occupy their closed position, that is they overlie the top of the box with their outer sides lying on an inwardly directed flange 36 formed at the top of each of the opposed sides 10, 12.

At the centre of the top edge of each of the opposed sides 10, 12 there is provided an inwardly directed lug 38 spaced above the flange 36 by a distance slightly greater than the thickness of the outer portion 28 of the lid sections. Co-operating fastening means 40, which may take any suitable form, are attached to the outer edges of each lid section, which, in the closed position lie against each other.

To finally close the lid sections the portions 26, 28 are hinged from the position shown in Fig. 4 to the position shown in Fig. 5 in which the fastening means 40 can interconnect and the junction of the sides with the leading end of each section underlie the lugs 38.

Various modifications can be made without departing from the scope of the invention, for example, in a suitably shaped container the lid can comprise only one section which, in the open condition lies alongside one wall. This lid section can comprise one portion or any number of portions hinged together. The hinges need not be integral hinges but could be formed by any suitable hinge means. Of course, where two lid

sections are provided each section can be made up of any number of hinged portions. With two lid sections it is not essential that one section is as long as the other. The metal rod forming the hinge pins 30 could be straight or take any form other than the U-shaped form shown in the drawings. It need not be moulded integrally with the lid but could be clipped into suitable formations on the lid or bolted or fixed to the lid in any other suitable means.

In a further modification the lateral edges of the lid sections could have a groove formed therein, inwardly directed pins fixed to the upper edges of the container alongside said proposed pair of walls projecting into the grooves. In other words, the fixing of the lid sections to the container could be the mechanical inversion of that described above with reference to the drawings.

The drawings show a container which can be stacked on another similar container when the lid sections are closed and the base of the container may be provided with suitable notches 42 for locating containers on a closed lower container. With the lid sections folded back into their open condition and the container emptied one container can nest within another similar container. Of course, various modified forms of containers can be employed still utilising lid

arrangements within the scope of the invention.

It is possible, and sometimes desirable to arrange for the lid sections to lie alongside the outer surface of the walls 14, 16 in the open condition. In this modification the slots 32 for the pins 30 are formed in extensions from the walls 10, 12 which project beyond the walls 14, 16. This modified container may be useful when the containers contents are expandible, for example knitted garments, and hinder the movement of the lid sections to the open position. Another solution to this problem is to provide partitions in the container parallel to the walls 14, 16 to leave a space for the lid sections.

CLAIMS

1. A container including a base, two pairs of opposed upstanding side walls and a lid mounted for movement on the container between an open condition in which it lies alongside the face of one or a pair of opposed side walls, to a closed condition in which it lies across the top of the container.
2. A container as claimed in claim 1, in which in the open condition the lid lies alongside the inner face of the side wall or walls.
3. A container as claimed in claim 1 or claim 2, in which the lid comprises two sections, each section being adapted, in the open condition, to lie alongside the inner face of an opposed side wall.
4. A container as claimed in any one of claims 1 to 3, in which the lid or lid sections are mounted to the container for movement relative thereto by a pin and slot arrangement.
5. A container as claimed in claim 4, in which pins

project from the sides of the lid and slots are formed in the container substantially parallel to the side of the pair of the opposed sides alongside which the lid section lies in the open condition.

6. A container as claimed in any one of claims 3 to 5, in which each section of the lid comprises three portions hingedly interconnected along a line parallel to the container side to which the lid section is attached.

7. A container as claimed in claim 6, in which the hinges are formed integrally with the lid portions from a plastics material.

8. A container as claimed in any one of the preceding claims, in which inwardly directed flanges are defined by the other pair of opposed side walls to provide a ledge on which the sides of the lid can rest when the lid is in the closed position.

9. A container as claimed in any one of claims 3 to 8, in which interconnection means are provided on the forward edges of the lid sections which, when in the closed position, lie alongside each other.

10. A container as claimed in any one of claims 3 to 9, in which said other pair of opposed sides of the container are provided with inwardly directed lugs which are adapted to overlie the forward edges of the lid section when in the closed position.

11. A container as claimed in any one of claims 4 to 10, in which the pins by which the lid sections are attached to the container are provided by the projecting ends of a metal rod which extends across the lid section.

12. A container as claimed in any one of claims 3 to 11, in which the said opposed sides of the containers are each provided with an aperture which the associated lid section can be moved away from their open condition, in which they are folded about their hinges, towards the closed position.

13. A container as claimed in any one of the preceding claims, which is so shaped and dimensioned as to be stackable on a similar container with its lid closed and nestable in said container with its lid open.

14. A container substantially as hereinbefore described with reference to the accompanying drawings.

15. Any novel subject matter or combination including
novel subject matter herein disclosed, whether or not
within the scope of or relating to the same invention
as any of the preceding claims.